

REMARKS

The examiner's attention to this lengthy application is appreciated.

Supplemental Information Disclosure Statement

Applicant notes that the Office Action did not consider International Publication Number WO 01/09535 A1, which was listed on an Information Disclosure Statement filed on or about June 15, 2004, because Applicant had not provided a copy. A Supplemental Information Disclosure Statement is provided herewith, including a copy of the previously-listed foreign reference that had been inadvertently omitted and authorization to pay the fee required under 37 CFR § 1.17(p) from the undersigned's deposit account.

Specification

Applicant has corrected wording in Paragraph 127 by inserting "be" in the last part of the sentence ... "that has an outside diameter adapted to be telescopically inserted and positioned in the inside circumferential surface 103 of the sleeve 102."

Applicant has not become aware of any other errors in the specification.

Drawings

In response to the objection to Figures 1 and 2, two replacement sheets for Figures 1 and 2 are submitted herewith to include the legend – Prior Art –.

The drawings were objected to under 37 CFR 1.83(a) because the specific terms "telescoping structures" (claim 1) and "means for telescoping" (claim 33) were not identified in the drawings. In response, Applicant notes that the "telescoping structures" or "means for telescoping" can include several different embodiments as described and illustrated with reference to the figures of the drawings.

For example, with reference to Figures 3 and 3a, representative structures for these features are described and indicated in the drawing as follows: "Each of the first abutment ring 114 and the second abutment ring 124 have an outer circumferential surface 115 and 125, respectively, that has an outside diameter adapted to be telescopically inserted and positioned in the inside circumferential surface 103 of the sleeve 102." (Specification, Paragraph 127-28.)

With reference to Figure 4, representative structures for these features are described and indicated in the drawing as follows: "The packing cartridge 200 further includes, without limitation, a second element 220 comprising a second sleeve portion 222 having at least a portion thereof telescopically positioned in at least a portion of the first sleeve portion 212, ..." (Specification, Paragraph 144.) "As will be appreciated, the telescoping structures of the first sleeve portion 212 and the second sleeve portion 222 allow for squeezing of the first abutment ring 214 and the second abutment ring 224 co-axially closer to one another after positioning the pre-assembled packing cartridge 200 on a plunger 38 in the packing bore 28. This axial squeezing is initially provided by the gland nut 32 (not shown in Figure 4). ... Preferably, these telescoping structures allow for at least sufficient overlapping travel in areas 212a and 222a to allow for the expected crushing of packing during the operation of a plunger 38 through the packing cartridge 200." (Specification, Paragraph 145.)

Additional descriptions in the specification and references to other figures of the drawing are included in the specification, e.g., Figure 6 and Paragraphs 154-155 and Paragraph 158. Figure 7 is similar to Figure 6 as described in Paragraph 161, and Figure 12 is similar to Figure 7 as described in Paragraph 193.

These descriptions and drawings are believed to be sufficient to reasonably identify the various embodiment examples of "telescoping structures" and "means for telescoping" with reference to the figures in the drawing as required under 37 CFR 1.83(a). Further, dependent Claims 6, 11, 38, and 43 further and specifically identify examples of these structures, which are specifically identified in the drawing. The terminology is used with reference to various structures as shown in the drawings, and it is believed that embodiments of such terms as used in the claims are adequately and reasonably well represented in the drawing. Reconsideration of this objection is respectfully requested.

In response to the observation regarding Claim 83 that "at least one gap" and "a lip" are not shown in the drawing, Claim 83 has been amended to use the language "milled slots formed in the bottom of the sleeve to facilitate prying the cartridge out of the packing bore." This language is fully supported by Figures 11 and 11a. No new matter has been added.

Election/Restrictions

Applicant previously elected without traverse Species X (Figs. 12 and 12a) on October 11, 2005. Applicant hereby cancels Claims 14, 22, 32, 45, 54, 64, 88, 98, and 129 without prejudice as being drawn to non-elected species.

Claim Clarifications

Applicant has amended independent Claims 1, 33, and 65 to clarify that which is regarded as the invention. Claims 1 and 33 have been amended to clarify that the “telescoping structures” or “means for telescoping”, respectively, are “operatively positioned ...to allow for squeezing of the first abutment ring and second abutment ring co-axially closer to one another.” Claim 65 has also been amended to clarify that “the first sleeve portion and the second sleeve portion are operatively positioned between the first abutment ring and the second abutment ring to allow for squeezing of the first abutment ring and second abutment ring co-axially closer to one another.” Support for these amendments can be found throughout the specification, and, for example, in originally-filed Claims 2, 34, and 67. No new matter has been added.

Claims 7 and 39 have been amended to clarify a grammatical error in the language. Support for the amendment is provided the specification, for example, in Paragraphs 64, 144, 155, 170, 185, 204, and 212, and throughout the Figures of the drawing, including, for example, Figures 3-14. No new matter has been added.

New Claims 132-139 have been added to further clarify that which the Applicant regards as the invention. Support for these new claims can be found throughout the specification, including, for example, in Paragraph 118, and the drawings, including, for example, in Figures 7, 7a, and 12. No new matter has been added. More particularly, new dependent Claims 132-134 depend from independent Claims 1, 33, and 65, respectively, to add the limitation that the telescoping structures, means for telescoping, or sleeve portions and the retaining ring or means for axially retaining are “operative to allow a packing to be held in a pre-assembled but relaxed condition.” New independent Claim 135 is directed to a sub-combination of Claims 1, 132, and 15. New Claims 136-139 depend from new independent Claim 135, including the subject matter of previously-presented Claims 4, 5, 6, and 11, respectively. No new matter has been added.

Claim Objections

Claims 30, 62, 63, 96, and 97 have been amended to correct “the pressure-ring retaining groove” to –the pressure-ring groove–.

Claims 25, 27, 57, 59, 91, and 93 have been amended to correct the terms “O.D.” and “I.D.” to be written out as –outer diameter– and –inner diameter–, respectively.

Claim 38 has been amended to correct “a first portion” to –a first sleeve portion–.

Claims 56 and 90 have been amended to correct the dependencies. Claim 56 has been amended to depend from Claim 55, and Claim 90 has been amended to depend from Claim 89.

Claim Rejections – 35 USC § 112

Claims 6 and 38 were rejected for lack of clarity. Applicant has amended Claims 6 and 38 to clarify that in each of these dependent claims “the telescoping structures” or the “means for telescoping,” respectively, are actually “a part of” the first and second sleeve portions of the sleeve. No new matter has been added.

Claims 11 and 43 were also rejected for lack of clarity. Claims 11 and 43 have been amended to clarify that in this dependent claim, “the telescoping structures” or the “means for telescoping,” respectively, are actually “a part of” the sleeve (which can be as an integrally formed sleeve 102) and one of the first and second abutment rings 114 and 124. In this regard, Applicant directs attention, for example, to the description of Paragraph 127 of the written specification and Figures 3 and 3a of the drawing. No new matter has been added.

Claims 67, 69, 75, and 77 were each rejected for insufficient antecedent basis for the limitations “the telescoping structures” and “the means for axially retaining.” Regarding the first antecedent basis issue in these claims, each of Claims 67, 69, 75, and 77 has been amended to correct “the telescoping structures” to –the first sleeve portion and the second sleeve portion–, which language was in independent Claim 65 from which these claims depend either directly or through intervening claims. Regarding the second antecedent basis issue, Claims 67 and 69 have been amended to delete the inadvertent inclusion in those claims of the reference to a “means for axially retaining.” Applicant notes that dependent Claims 75 and 77 had depended from Claim 128 (out of sequence because an inadvertently omitted sheet of claims was replaced after the original filing of this application), which did provide antecedent basis for the “means for axially retaining.” However, to correct an unnecessary deviation from the normal sequence

of claims, Applicant has amended Claims 75 and 77 to include “means for axially retaining” and to depend directly from independent Claim 65. No new matter has been added.

For the same reason, that is to correct an unnecessary deviation from the normal sequence of claims, Applicant has also amended Claims 79 and 82 to depend directly from independent Claim 65. No new matter has been added.

Claim 127 was rejected for insufficient antecedent basis for the limitation “the telescoping first and second sleeve portions.” In response, Claim 127 has been amended to correct to –the first sleeve portion and the second sleeve portion–, which language was in independent Claim 65 from which this claim depends (through intervening claims). No new matter has been added.

Claim Rejections – 35 USC § 102

Claims 1-13, 15-21, 23, 30, 31, 33-44, 46-53, 55, 62, 63, 65-69, 75-87, 89, 96, 97, 127, 128, 130, and 131 were rejected as being anticipated by Covert et al., U.S. Patent No. 5,263,682. Applicant respectfully requests reconsideration.

Independent Claims 1, 33, and 65 each require that the “telescoping structures,” “means for telescoping,” or “sleeve portions,” respectively, are “operatively positioned” “to allow for squeezing of the first abutment ring and second abutment ring co-axially closer to one another.” As used in the specification and supported by the context of all the embodiments relating to this aspect of the invention, to “squeeze” means to “press something from two sides: to press something hard in the hand or between two other objects, especially in order to reduce its size or alter its shape.” Encarta® World English Dictionary [North American Edition] © 2006 Microsoft Corporation. Another dictionary defines to “squeeze” as “to exert pressure especially on opposite sides of : COMPRESS.” Merriam-Webster Online Dictionary. According to yet another dictionary, to “squeeze” means “to press hard on or together; compress.” The American Heritage® Dictionary of the English Language, Fourth Edition, 2000. All of these definitions are consistent with the written description and drawings of the invention illustrating the abutment rings being squeezed closer together between, for example, the seat 29 of a packing bore 28 and a gland nut 32 (e.g., Figure 1 and Paragraphs 97-98). “The squeezing of the telescoping structures is preferably provided by capturing the packing cartridge in the packing

bore between the seat 29 of the packing bore 28 and a gland, such as a gland nut 32.”

Specification, e.g., Paragraph 117; see also, Specification, Figure 3 and Paragraph 136.)

Claims 1, 33, and 65 are directed to a co-operative arrangement of structures, not a mere collection of elements. As recited in these independent claims, and as shown in every one of the embodiments relating to these features, the telescoping structures, means for telescoping, or sleeve portions between the first abutment ring and the second abutment ring are in fact “operatively positioned” to allow for squeezing the abutment rings co-axially closer to one another.

In contrast, the structure disclosed in Figure 3 of Covert et al., including the cited surfaces between the “nut member 76” (Covert et al., Column 3, lines 25-27) and “shoulder 52” (Covert et al., Column 3, line 60), are not “operatively positioned” to allow for squeezing “co-axially closer to one another” as specified in pending Claims 1, 33, and 65. Rather, the threads 80 and 82 in that structure are operatively positioned between the nut member 76 and shoulder 52 in a manner that actually prevents any squeezing of those elements co-axially closer together.

Further, regarding Claims 1 and 33, the threads 80 and 82 (Covert et al., Column 4, lines 26-30) as positioned in that structure prevent the “O-ring seal element 90” (Covert et al., Column 4, lines 35-39) from meaningfully “retaining” any of the other elements of the structure together. The structure disclosed in Covert et al. is not capable of operating as required by independent Claims 1, 33, and 65.

Regarding Claims 2, 34, 67, 69, 75, and 77, Covert et al. does not disclose a structure that is operative for squeezing or retaining “after positioning the packing cartridge in the packing bore” as specified in these claims. Part of the reason for this is that Covert et al. does not disclose a “packing cartridge” at all, but, as best understood, Covert et al. discloses a valve packing system, wherein the “bonnet portion 24” (Covert, Figure 1, Column 2, line 67 – Column 3, line 1; Figure 3 and Column 3, lines 53-56) is a part of the valve body 12. Thus, the “bonnet portion 24” (Figure 1) and the “shoulder 52” (Covert et al., Figure 3) are not a packing cartridge that fits into a packing bore. As best understood, Covert et al. does not disclose removing the “bonnet portion 24” or positioning that “bonnet portion 24” in a packing bore. In this regard, the “shoulder 52” (Covert et al., Column 3, line 60) is analogous to the seat 29 of a packing bore 28 as described for Applicant’s invention.

Regarding Claims 7 and 39, Covert et al. does not disclose that “the first sleeve portion” is “adapted to be positioned in at least a portion of the packing bore.” Again, part of the reason for this is that Covert et al. does not disclose a “packing cartridge” at all, but, as best understood, Covert et al. discloses a valve packing system, wherein the “bonnet portion 24” (Covert, Figure 1, Column 2, line 67 – Column 3, line 1; Figure 3 and Column 3, lines 53-56) is a part of the valve body 12. Thus, the “bonnet portion 24” (Figure 1) and the “shoulder 52” (Covert et al., Figure 3) are not a packing cartridge that fits into a packing bore. As best understood, Covert et al. does not disclose removing the “bonnet portion 24” or positioning that “bonnet portion 24” in a packing bore. In this regard, the “shoulder 52” (Covert et al., Column 3, line 60) is analogous to the seat 29 of a packing bore 28 as described for Applicant’s invention.

Regarding Claims 10, 42, 66, and 131, Covert et al. does not disclose “a spacer ring operatively positioned to cover the overlapping travel of the telescoping structures between the first and second sleeve portions” (Claim 10), “a spacer ring operatively positioned to cover the overlapping travel of the means for telescoping (Claim 42), or “a spacer ring operatively positioned to cover the overlapping travel of the first and second sleeve portions” (Claims 66 and 131). The “resilient packing element 100” (Covert et al., Figure 3, Column 4, lines 50-54) and the “packing support elements 102 (Covert et al., Figure 3, Column 4, lines 54-59) are not “operatively positioned” to “cover” the overlapping travel of the recited structures in Claims 10, 42, 66, and 131.

Regarding Claims 11 and 43, Covert et al. does not disclose that “the telescoping structures are a part of the sleeve and one of the first and second abutment rings.” As mentioned above, these claims have been amended to more clearly refer to the embodiment of the telescoping structures as illustrated, for example, in Figure 3 of the drawing. “According to this embodiment shown in Figure 3, the sleeve 102 has an inside circumferential surface 103 in which packing elements can be inserted telescopically and positioned. Each of the first abutment ring 114 and the second abutment ring 124 have an outer circumferential surface 115 and 125, respectively, that has an outside diameter adapted to be telescopically inserted and positioned in the inside circumferential surface 103 of the sleeve 102.” (Specification, Paragraph 127.) In contrast, the Office Action elsewhere notes the surfaces between the “nut member 76” (Covert et al., Column 3, lines 25-27) and “shoulder 52” (Covert et al., Column 3, line 60) as being telescoping members between first and second sleeve portions.

Regarding Claims 13, 46, and 130, the o-ring disclosed in Covert et al., is not operative to retain the telescoping structures together. As previously discussed, the threads 80 and 82 in Covert et al. prevent any meaningful function of such an o-ring to frictionally retain the telescoping structures together. In the context of the magnitude of the forces exerted by the threads 80 and 82 in Covert et al. between the "nut member 76" (Covert et al., Column 3, lines 25-27) and "shoulder 52" (Covert et al., Column 3, line 60), any frictional engagement of the o-ring 90 for the purpose of providing a fluid seal (Covert et al., Column 4, lines 34-39) would, in that context, be insignificant "to resist separation of the telescoping structures."

Claims 18, 50, and 84 have been amended to clarify that the difference in dimensions is "to provide" at least one clearance between the pressure-ring groove and the pressure ring. Support for this amendment is found in the specification, for example, in Paragraphs 197-198, and with reference to the Figures, including, for example, Figure 12a. No new matter has been added. In this regard, it is noted that structures cited in Covert et al., Figure 3, do not provide a clearance between the side wall 68 and the wedge-shaped seal ring elements 70 (Covert et al., Column 4, lines 14-21). In fairness to reasonable definitions, a space occupied by a solid object, such as either one of the elements 70, is not a "clearance." Reconsideration is respectfully requested.

Furthermore, regarding dependent Claims 19, 51, and 85, the fact that "the wedge-shaped seal ring elements 70" are two parts forming a ring does not change the fact that together they are adapted to form a ring that operates between the surface 68 and the plunger 20. Thus, these "ring elements 70" (Covert et al., Column 4, lines 14-21) do not present "a slightly smaller internal diameter than the outside diameter of a plunger."

Regarding dependent Claims 20, 52, and 86, Applicant is not aware that "metal or a relatively hard resinous material" (Covert et al., Column 4, lines 14-21) is known to have a low coefficient of friction. Reconsideration or support for this assertion is respectfully requested.

Regarding dependent Claims 21, 53, and 87, it is respectfully noted that the "the wedge-shaped seal ring elements 70" are two parts forming a ring that do not get smaller in diameter thereby creating a relatively thin wall.

Regarding dependent Claims 23, 55, and 89, again, it is respectfully noted that "the wedge-shaped seal ring elements 70" are two parts forming a ring that does not have any "difference between the external dimension of the pressure ring and the internal dimension of

the pressure-ring groove.” Further, as there is no difference or clearance, the structure disclosed in Figure 3 of Covert et al. is not capable of forming a small fluid reservoir.

Claim Rejections – 35 USC § 103

Claims 24-29, 56-61, and 90-95 were rejected under USC § 103 as being unpatentable over Covert et al., U.S. Patent No. 5,263,682. Applicant respectfully requests reconsideration.

Regarding Claims 24-27, 56-59, and 90-93, it is first respectfully noted that, as discussed above with respect to the independent and intervening claims from which these claims depend, Covert et al. does not teach the invention as claimed. Further, for there to be “an obvious mechanical expedient” to provide the specifically claimed dimensions, there must be a conventional mechanical consideration motivating such dimensional choices. In the case of these claims, Applicant notes that the dimensions are not motivated by any conventional mechanical considerations, but the discovery that providing at least one clearance with such differences in dimension provides advantages of a different kind than previously considered or disclosed in the cited reference. The cited reference does not teach or suggest any motivation to make such dimensional choices as claimed.

Regarding Claims 28, 29, 60, 61, 94, and 95, Applicant notes that there is no teaching or suggestion in the cited reference to make the pressure ring of a plastic, or more particularly and more preferably of a fluorocarbon. For it to be a matter of obvious design choice to select a known material on the basis of its suitability for the intended use depends on a teaching or suggestion of the intended use. With respect to these claims, there is no teaching or suggestion in Covert et al. regarding the intended use of the pressure ring. For example:

“It is believed that any clearances between the pressure ring 1094 and the pressure-ring groove 1092 act as a fluid capacitor, which can help delay the development of the high pressure on the outside diameter of the pressuring ring until the plunger reaches its upward stroke (sometimes referred to as the “back stroke”). This effect is believed to reduce or soften the impact of rapid pressure changes on any packing elements above.” (Specification, Paragraphs 199-200.)

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Conclusion

The amendment is believed to place the application in condition for allowance, and such action is respectfully requested. If a telephone interview would assist to expedite the application, please contact the undersigned at 214-220-0444.

The Commissioner for Patents is hereby authorized to charge any additional fees relating to this paper or credit any overpayment to Deposit Account No. 50-3037. A duplicate copy of the fee authorization sheet is enclosed for this purpose.

Dated: September 15, 2006

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